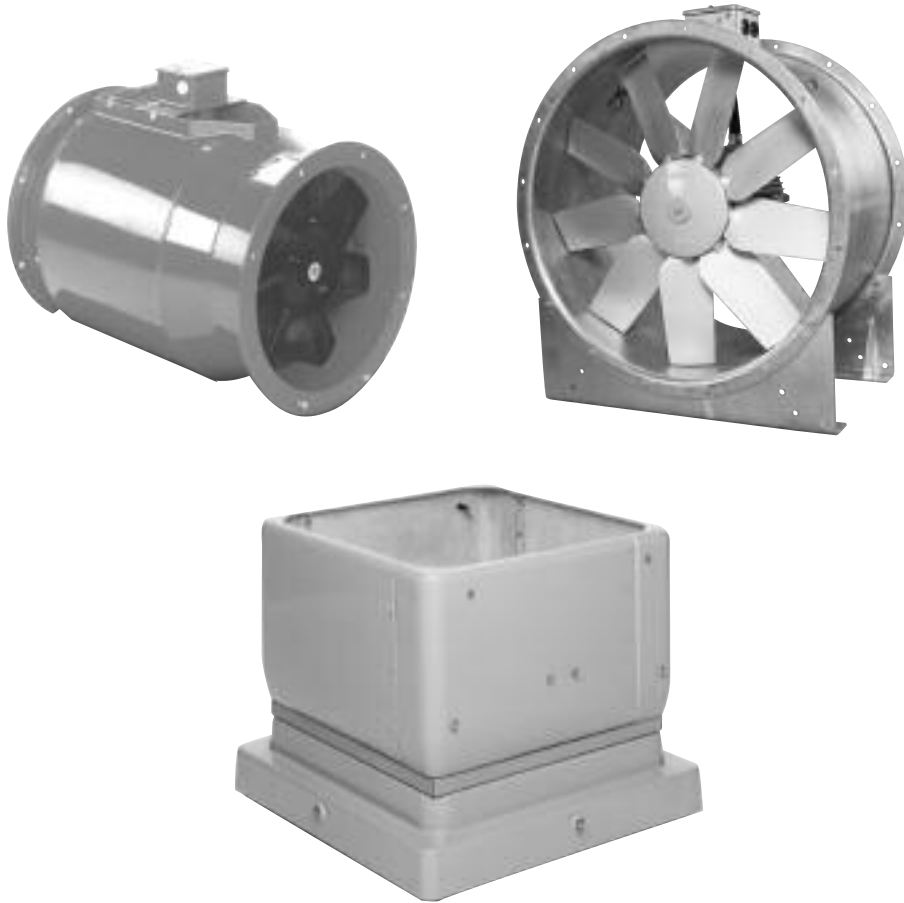


H.T Series - Smoke Venting Equipment



Safety, Installation, Operation and Maintenance Instructions

Part No. 412111

H.T. Series Smoke Venting Equipment

FANS FOR EMERGENCY OPERATION AT HIGH AMBIENTS FOR A LIMITED PERIOD

SAFETY

This product contains rotating parts and electrical connections which can be a danger and cause injury.

It is of paramount importance for any fan that is required to function in emergency conditions, that the installer and user follow all relevant instructions in this leaflet, as well as those contained in the general Instruction Leaflet supplied with this product.

To ensure that the fan will operate as intended, if an emergency results in an abnormal high air temperature, the user must:

- a) Ensure that the electrical system has been designed and installed in a manner that is associated with the specified emergency conditions of temperature and duration.
and
- b) Institute a regular, verifiable maintenance procedure that takes into account the requirements and recommendations in this leaflet, including re-lubrication as specified and, after an appropriate number of years, a complete re-fit.

INSTALLATION, OPERATION AND MAINTENANCE INSTRUCTIONS

These instructions apply to all axial fans, including Aerofoils, UDA Roof Units, Varofoils and Bifurcated Fans. They must be read in conjunction with those in the standard Instruction Leaflet for these fans:-

Aerofoil Fans:- Pt. No. 400045

Varofoil Fans:- Pt. No. 405675

SITE STORAGE, SUPPLY, INSTALLATION

Refer to the appropriate instruction leaflets given above. When fans are retained in storage, access by un-authorised persons must be prevented with the use of guards, barriers or secure premises such that fan impellers which may be rotating do not present a hazard.

OPERATING CONDITIONS

Under emergency conditions, these fans are suitable for temperature/time capability given in catalogue HT Series e.g. HT300/1 suitable for 300°C for 1 hour.

DVA Roof Units are only suitable for up to 300°C for 30 minutes due to their construction whilst UDA Roof Units and certain axials can be used up to 400°C for 2 hours. Bifurcated fans can operate up to 600°C for 2 hour so long as the air temperature at entry to the motor compartment does not exceed 50°C: with the larger fan sizes, and when an emergency air temperature above 400°C has to be allowed for, it will probably be necessary to provide means of ducting heated air from the motor compartment to a safe location.

Unless otherwise stated fans are suitable for continuous operation prior to the emergency in ambient temperatures of -40 to +40°C (Roof Units can be used up to +50°C).

On the fan nameplate, the maximum temperature may be shown as +40°C but when installed for emergency use, the temperature/time capability will be as shown on the special label adjacent to the main nameplate.

CONNECTION

The wiring to the fan must be in accordance with the connection diagram in the terminal box.

Fans are designed primarily for 3 phase electrical supply but some smaller fans are available for 1 phase supply. Where 1 phase fans are to be installed, the capacitor must be mounted well outside the potential high temperature area.

On commissioning, the rotation of the impeller should always be checked.

CABLE

It is recommended that special fire-resistant cable be used between the main supply, starter controls and the fan. The mains supply should be from a guaranteed or separately maintained source to enable the fan to continue running under emergency conditions.

Duct-mounted terminal boxes for all fan specifications more severe than HT 150/5 are designed to accommodate MICC supply cables.

CONTROL

Fläkt Woods control panels are available for smoke-control systems incorporating Aerofoil Fans, Bifurcated Fans and Roof Units (not Varofoils). These smoke venting control panels include the following features:

Door-lock isolators, indicator lights, removable gland plates and sheet steel enclosures to IP44.

The control panels must be connected in accordance with the diagrams supplied.

Control panels do not provide thermal overload protection of the motors in emergency operation.

Control panels do provide thermal overload protection of the motors when in normal operating mode.

The control panel should be sited at the usual height for operating convenience, located where the ambient temperature at the controller is not expected to exceed 40°C during the emergency condition.

Inverter drives used for speed control in normal operating mode must be by-passed when the fan is operating in emergency mode.

MAINTENANCE (AT 3 MONTHLY INTERVALS) WHEN FANS NOT NORMALLY RUN

If the fan is intended for emergency use only, the resistance of the windings to earth should be measured (at 500v dc). If it proves to be less than 10 megohms, the motor should be dried out and re-checked. Run the motor for a short interval to prevent hardening of the grease and corrosion of the bearing.

MAINTENANCE (AT 6 MONTHLY INTERVALS)

On bifurcated fans only; remove the impeller and check the condition of the shaft packing seal located behind the shaft seal retaining plate. Replace the packing seal (Part No. 407212) if necessary.

LUBRICATION

The fan is supplied lubricated with grease in accordance with the motor/fan nameplate. Further lubrication is not normally required until after the period specified in the Table.

MOTOR	BEARING				RE-LUBRICATION PERIOD HOURS			
	DE		TE (NDE)		UP TO	UP TO	UP TO	UP TO
	ml	cu. in	ml	cu. in	3600 RPM	3000 RPM	1800 RPM	1500 RPM
D63/71	2.0	0.1	2.0	0.1	6000	6000	12000	12000
F16	3.5	0.2	3.5	0.2	6000	6000	12000	12000
F22	5.0	0.3	4.0	0.25	6000	6000	12000	12000
D132	8.0	0.5	7.0	0.45	3000	3000	6000	12000
D160	12.5	0.75	8.0	0.5	3000	3000	6000	12000
D180	15.0	0.9	9.0	0.55	3000	3000	6000	12000
D200	20.0	1.2	12.0	0.75	1500	3000	6000	6000
D225	23.0	1.4	17.5	1.1	1500	3000	6000	6000

MOTORS WITH LUBRICATORS

If lubricators are fitted, the fans should be lubricated as set out in the Table below overriding the figures given in the standard instructions. (Fans intended for emergency use only should be re-lubricated every 3 years).

MOTORS WITHOUT LUBRICATORS

If the fan is not fitted with lubricators, it should be dismantled and relubricated after 20,000 hours running, or 3 years, whichever is the shorter, in ambients up to 50°C (10,000 hours where motor speed exceeds 1800 rpm). With motors in airstream above 300°C, the special grease used has a very low-fill requirement and these fans, therefore, do not have relubrication facilities. The old grease should be washed out with its designated solvent. The bearings should be refilled with grease leaving the housing empty. If a bearing is removed from the rotor, it should be discarded and a new one fitted, using the approved grease.

TESTING (FANS AND CONTROLS)

It is recommended that the system is tested for emergency operation every 6 months.

Fläkt Woods smoke venting control panels provide this facility for Aerofoil Fans, Bifurcated Fans and Roof Units

To test: Press emergency button on panel.

To reset:

- 1) Switch off isolator
- 2) Press emergency button (button will return to original position).
- 3) Switch on isolator

Note: Fans should only be run for short periods as no thermal overloads are in circuit for emergency condition.

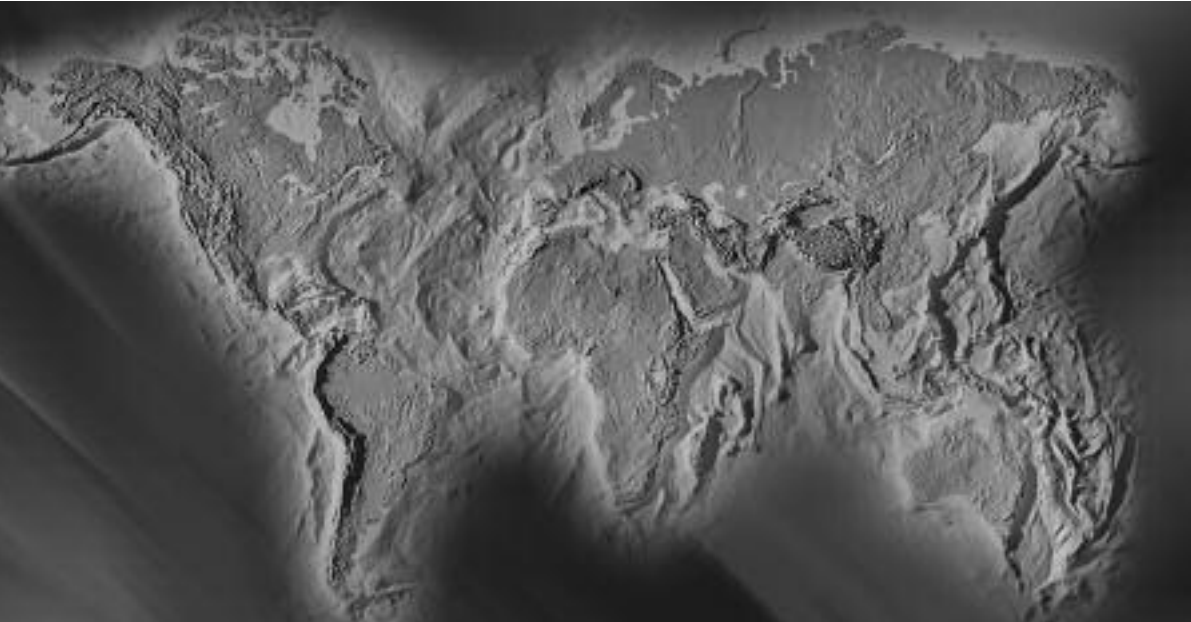
The method of testing Smoke Venting Varofoil Fans, including the latching feature is detailed on the instruction plate Pt. No. 408093.

LONG TERM RELIABILITY

Consideration should be given by the responsible Engineer, to a major refit after operation for 50,000 hours. This would involve rewinding with materials of equivalent thermal endurance and replacement of bearings. Guidance on the time span prior to re-fit can be given by Fläkt Woods Limited on receipt of full operational information, duty cycle, "HT" category, and other nameplate data.

THIS LEAFLET SHOULD BE PASSED TO THE USER TO ENABLE THE FAN TO BE MAINTAINED IN A SAFE CONDITION.

We Bring Air to Life



Fläkt Woods Group provides a full range of products and solutions for buildings ventilation, air treatment and industrial air movement

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